

## SEQUENCE LISTING

## (1) GENERAL INFORMATION:

- (i) APPLICANT: Landry W., Donald
- (ii) TITLE OF INVENTION: ANTI-COCAINE CATALYTIC ANTIBODY
- (iii) NUMBER OF SEQUENCES: 90
- (iv) CORRESPONDENCE ADDRESS:
  - (A) ADDRESSEE: Cooper and Dunham LLP
  - (B) STREET: 1185 Avenue of the Americas
  - (C) CITY: New York
  - (D) STATE: New York
  - (E) COUNTRY: USA
  - (F) ZIP: 10036
- (v) COMPUTER READABLE FORM:
  - (A) MEDIUM TYPE: Floppy disk
  - (B) COMPUTER: IBM PC compatible
  - (C) OPERATING SYSTEM: PC-DOS/MS-DOS
  - (D) SOFTWARE: PatentIn Release #1.0, Version #1.30
- (vi) CURRENT APPLICATION DATA:
  - (A) APPLICATION NUMBER: US
  - (B) FILING DATE: 24-JUN-1997
  - (C) CLASSIFICATION:
- (viii) ATTORNEY/AGENT INFORMATION:
  - (A) NAME: White, John P.
  - (B) REGISTRATION NUMBER: 28,678
  - (C) REFERENCE/DOCKET NUMBER: 0575/51400-A-PCT
- (ix) TELECOMMUNICATION INFORMATION:
  - (A) TELEPHONE: 212-278-0400
  - (B) TELEFAX: 212-391-0525

## (2) INFORMATION FOR SEQ ID NO:1:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 109 amino acids
  - (B) TYPE: amino acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear
- (ii) MOLECULE TYPE: protein
- (xi) SEQUENCE DESCRIPTION: SEQ ID NO:1:
 

Ala	Val	Val	Thr	Gln	Glu	Ser	Ala	Leu	Thr	Thr	Trp	Pro	Gly	Glu	Thr	1	5	10	15
Val	Thr	Leu	Thr	Cys	Arg	Ser	Ser	Thr	Gly	Thr	Ile	Thr	Thr	Ser	Asn	20	25	30	
Tyr	Ala	Asn	Trp	Val	Gln	Glu	Lys	Pro	Asp	His	Leu	Phe	Ser	Gly	Leu	35	40	45	
Ile	Gly	Ile	Asn	Asn	Asn	Arg	Pro	Pro	Gly	Val	Pro	Ala	Arg	Phe	Ser	50	55	60	
Gly	Ser	Leu	Ile	Gly	Asp	Lys	Ala	Val	Leu	Thr	Ile	Thr	Gly	Ala	Gln	65	70	75	80

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Thr Glu Asp Glu Ala Ile Tyr Phe Cys Ala Leu Trp Tyr Ser Asn His  
85 90 95

Trp Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu Gly  
100 105

## (2) INFORMATION FOR SEQ ID NO:2:

- (i) SEQUENCE CHARACTERISTICS:  
 (A) LENGTH: 109 amino acids  
 (B) TYPE: amino acid  
 (C) STRANDEDNESS: single  
 (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: protein

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:2:

Ala Val Val Thr Gln Glu Ser Ala Leu Thr Thr Arg Pro Gly Glu Thr  
1 5 10 15

Val Thr Leu Thr Cys Arg Ser Ser Ala Gly Thr Ile Thr Thr Ser Asn  
20 25 30

Tyr Ala Asn Trp Val Gln Glu Lys Pro Asp His Leu Phe Ser Gly Leu  
35 40 45

Ile Gly Val Asn Asn Asn Arg Pro Pro Gly Val Pro Ala Arg Phe Ser  
50 55 60

Gly Ser Leu Ile Gly Asp Thr Ala Ala Leu Thr Ile Thr Gly Ala Gln  
65 70 75 80

Thr Glu Asp Glu Ala Ile Tyr Phe Cys Ala Leu Trp Tyr Ser Asn His  
85 90 95

Trp Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu Gly  
100 105

## (2) INFORMATION FOR SEQ ID NO:3:

- (i) SEQUENCE CHARACTERISTICS:  
 (A) LENGTH: 109 amino acids  
 (B) TYPE: amino acid  
 (C) STRANDEDNESS: single  
 (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: protein

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:3:

Ala Val Val Thr Gln Glu Ser Ala Leu Thr Thr Ser Pro Gly Glu Thr  
1 5 10 15

Val Thr Leu Thr Cys Arg Ser Ser Thr Gly Thr Ile Thr Ser Asp Asn  
20 25 30

Tyr Ala Asn Trp Val Gln Glu Lys Pro Asp His Leu Phe Ser Gly Leu  
35 40 45

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Ile Gly Val Asn Asn Tyr Arg Pro Pro Gly Val Pro Ala Arg Phe Ser  
 50 55 60  
 Gly Ser Leu Thr Gly Asp Lys Ala Val Leu Thr Ile Thr Gly Ala Gln  
 65 70 75 80  
 Thr Glu Asp Glu Ala Ile Tyr Phe Cys Ala Leu Trp Tyr Ser Asn His  
 85 90 95  
 Trp Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu Gly  
 100 105

## (2) INFORMATION FOR SEQ ID NO:4:

- (i) SEQUENCE CHARACTERISTICS:  
 (A) LENGTH: 109 amino acids  
 (B) TYPE: amino acid  
 (C) STRANDEDNESS: single  
 (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: protein

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:4:

Ala Val Val Thr Gln Glu Ser Ala Leu Thr Arg Ala Pro Gly Glu Thr  
 1 5 10 15  
 Val Thr Leu Thr Cys Arg Ser Ser Ser Gly Thr Ile Thr Ala Asn Asn  
 20 25 30  
 Tyr Gly Ser Trp Val Gln Glu Lys Pro Asp His Leu Phe Thr Gly Leu  
 35 40 45  
 Ile Gly Val Ser Asn Asn Arg Gly Pro Gly Val Pro Ala Arg Phe Ser  
 50 55 60  
 Gly Ser Leu Ile Gly Asp Lys Ala Val Leu Thr Ile Thr Gly Gly Gln  
 65 70 75 80  
 Thr Glu Asp Glu Ala Ile Tyr Phe Cys Ala Leu Trp Asn Ser Asn His  
 85 90 95  
 Phe Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu Gly  
 100 105

## (2) INFORMATION FOR SEQ ID NO:5:

- (i) SEQUENCE CHARACTERISTICS:  
 (A) LENGTH: 113 amino acids  
 (B) TYPE: amino acid  
 (C) STRANDEDNESS: single  
 (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: protein

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:5:

Asp Ile Val Met Thr Gln Asp Glu Leu Ser Asn Pro Val Thr Ser Gly

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1                      5                      10                      15  
 Glu Ser Val Ser Ile Ser Cys Arg Ser Ser Arg Ser Leu Leu Tyr Arg  
                     20                      25                      30  
 Asp Gly Lys Thr Tyr Leu Asn Trp Phe Leu Gln Arg Pro Gly Arg Ser  
                     35                      40                      45  
 Pro Gln Leu Leu Ile Tyr Leu Met Ser Thr Arg Ser Ser Gly Val Ser  
                     50                      55                      60  
 Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Glu Ile  
                     65                      70                      75                      80  
 Ser Arg Val Lys Ala Glu Asp Val Gly Val Tyr Tyr Cys Gln His Phe  
                     85                      90                      95  
 Val Asp Tyr Pro Phe Thr Phe Gly Ser Gly Thr Lys Leu Glu Ile Lys  
                     100                      105                      110  
 Arg

## (2) INFORMATION FOR SEQ ID NO:6:

- (i) SEQUENCE CHARACTERISTICS:  
 (A) LENGTH: 113 amino acids  
 (B) TYPE: amino acid  
 (C) STRANDEDNESS: single  
 (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: protein

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:6:

Asp Met Val Met Thr Gln Asp Glu Leu Ser Asn Pro Val Thr Ser Gly  
 1                      5                      10                      15  
 Glu Ser Val Ser Ile Ser Cys Arg Ser Ser Arg Ser Leu Leu Tyr Arg  
                     20                      25                      30  
 Asp Gly Lys Thr Tyr Leu Asn Trp Phe Leu Gln Arg Pro Gly Arg Ser  
                     35                      40                      45  
 Pro Gln Leu Leu Ile Tyr Leu Met Ser Thr Arg Ala Ser Gly Val Ser  
                     50                      55                      60  
 Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Glu Ile  
                     65                      70                      75                      80  
 Ser Arg Val Lys Ala Glu Asp Val Gly Val Tyr Tyr Cys Gln His Phe  
                     85                      90                      95  
 Glu Asp Tyr Pro Phe Thr Phe Gly Ser Gly Thr Lys Leu Glu Ile Lys  
                     100                      105                      110  
 Arg

## (2) INFORMATION FOR SEQ ID NO:7:

- (i) SEQUENCE CHARACTERISTICS:  
 (A) LENGTH: 113 amino acids  
 (B) TYPE: amino acid

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- (C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: protein

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:7:

```

Asp Met Val Met Thr Gln Asp Glu Leu Ser Asn Pro Val Thr Ser Gly
1           5           10           15
Glu Ser Val Ser Ile Ser Cys Arg Ser Ser Arg Ser Leu Leu Tyr Arg
20           25           30
Asp Gly Lys Thr Tyr Leu Asn Trp Phe Leu Gln Arg Pro Gly Arg Ser
35           40           45
Pro Gln Leu Leu Ile Tyr Leu Met Ser Thr Arg Ala Ser Gly Val Ser
50           55           60
Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Glu Ile
65           70           75           80
Ser Arg Val Lys Ala Glu Asp Val Gly Val Tyr Tyr Cys Gln His Phe
85           90           95
Val Asp Tyr Pro Phe Thr Phe Gly Ser Gly Thr Lys Leu Glu Ile Lys
100          105          110
Arg

```

(2) INFORMATION FOR SEQ ID NO:8:

- (i) SEQUENCE CHARACTERISTICS:  
 (A) LENGTH: 113 amino acids  
 (B) TYPE: amino acid  
 (C) STRANDEDNESS: single  
 (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: protein

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:8:

```

Asp Ile Val Ile Thr Gln Asp Glu Leu Ser Asn Pro Val Thr Ser Gly
1           5           10           15
Glu Ser Val Ser Ile Ser Cys Arg Ser Ser Lys Ser Leu Leu Tyr Glu
20           25           30
Asp Gly Lys Thr Tyr Leu Asn Trp Phe Leu Gln Arg Pro Gly Gln Ser
35           40           45
Pro His Leu Leu Ile Tyr Leu Met Ser Thr Arg Ala Ser Gly Val Ser
50           55           60

```

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Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Glu Ile  
 65 70 75 80  
 Ser Arg Val Lys Ala Glu Asp Val Gly Ala Tyr Tyr Cys Gln Gln Phe  
 85 90 95  
 Val Glu Tyr Pro Phe Thr Phe Gly Ser Gly Thr Lys Leu Glu Ile Arg  
 100 105 110  
 Arg

## (2) INFORMATION FOR SEQ ID NO:9:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 114 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

## (ii) MOLECULE TYPE: protein

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:9:

Glu Leu Val Met Thr Gln Ser Pro Leu Thr Leu Ser Val Thr Ile Gly  
 1 5 10 15  
 Gln Pro Ala Ser Ile Ser Cys Lys Ser Ser Gln Ser Leu Leu Tyr Ser  
 20 25 30  
 Asp Gly Lys Thr Tyr Leu Asn Trp Phe Phe Gln Arg Pro Gly Gln Ser  
 35 40 45  
 Pro Lys Arg Leu Ile Tyr Leu Val Ser Lys Leu Asp Ser Gly Val Pro  
 50 55 60  
 Asp Arg Phe Thr Gly Ser Gly Ser Gly Lys Asp Phe Thr Leu Lys Glu  
 65 70 75 80  
 Ile Ser Arg Val Glu Ala Glu Asp Leu Gly Leu Tyr Tyr Cys Val Gln  
 85 90 95  
 Gly Tyr Thr Phe Pro Leu Thr Phe Gly Ala Gly Thr Lys Leu Glu Leu  
 100 105 110  
 Lys Arg

## (2) INFORMATION FOR SEQ ID NO:10:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 117 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

## (ii) MOLECULE TYPE: protein

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:10:

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Asp Val Gln Leu Gln Glu Ser Gly Pro Gly Leu Val Lys Pro Ser Gln  
 1 5 10 15  
 Ser Leu Ser Leu Thr Cys Thr Val Thr Gly Asn Ser Ile Thr Ser Asp  
 20 25 30  
 Tyr Ala Trp Thr Trp Ile Arg Gln Phe Pro Gly Asn Lys Leu Glu Trp  
 35 40 45  
 Met Gly Tyr Ile Arg His Ile Tyr Gly Thr Arg Tyr Asn Pro Ser Leu  
 50 55 60  
 Ile Ser Arg Ile Ser Ile Thr Arg Asp Thr Ser Lys Asn Gln Phe Phe  
 65 70 75 80  
 Leu Gln Leu Asp Ser Val Thr Ala Glu Asp Thr Ala Thr Tyr Tyr Cys  
 85 90 95  
 Val Arg Tyr His Tyr Tyr Gly Ser Ala Tyr Trp Gly Gln Gly Thr Leu  
 100 105 110  
 Val Thr Val Ser Ala  
 115

## (2) INFORMATION FOR SEQ ID NO:11:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 117 amino acids
  - (B) TYPE: amino acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: protein

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:11:

Asp Val Gln Leu Gln Glu Ser Gly Pro Gly Leu Val Lys Pro Ser Gln  
 1 5 10 15  
 Ser Leu Ser Leu Thr Cys Thr Val Thr Gly Asn Ser Ile Thr Ser Asp  
 20 25 30  
 Tyr Ala Trp Thr Trp Ile Arg Gln Phe Pro Gly Asn Lys Leu Glu Trp  
 35 40 45  
 Met Gly Tyr Ile Arg His Ile Tyr Gly Thr Arg Tyr Asn Pro Ser Leu  
 50 55 60  
 Ile Ser Arg Ile Ser Ile Thr Arg Asp Thr Ser Lys Asn Gln Phe Phe  
 65 70 75 80  
 Leu Gln Leu Asp Ser Val Thr Ala Glu Asp Thr Ala Thr Tyr Tyr Cys  
 85 90 95  
 Val Arg Tyr His Tyr Tyr Gly Ser Ala Tyr Trp Gly Gln Gly Thr Leu  
 100 105 110  
 Val Thr Val Ser Ala

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## (2) INFORMATION FOR SEQ ID NO:12:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 117 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: protein

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:12:

```

Asp Val Gln Leu Gln Glu Ser Gly Pro Gly Leu Val Lys Pro Ser Gln
1           5           10           15
Ser Leu Ser Leu Thr Cys Thr Val Thr Gly Asn Ser Ile Thr Ser Asp
          20           25           30
Tyr Ala Trp Thr Trp Ile Arg Lys Phe Pro Gly Asn Lys Leu Glu Trp
          35           40           45
Leu Gly Tyr Ile Arg His Ile Tyr Gly Thr Arg Tyr Asn Pro Ser Leu
          50           55           60
Ile Ser Arg Ile Ser Ile Thr Arg Asp Thr Ser Lys Asn Gln Phe Phe
          65           70           75           80
Leu Gln Leu Asp Ser Val Thr Ala Glu Asp Thr Ala Thr Tyr Tyr Cys
          85           90           95
Val Arg Tyr His Tyr Tyr Gly Ser Ala Tyr Trp Gly Gln Gly Thr Leu
          100          105          110
Val Thr Val Ser Ala
          115

```

## (2) INFORMATION FOR SEQ ID NO:13:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 117 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: protein

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:13:

```

Asp Val Gln Leu Gln Glu Ser Gly Pro Glu Leu Val Lys Pro Ser Gln
1           5           10           15
Ser Leu Ser Leu Thr Cys Thr Val Thr Gly Tyr Ser Ile Thr Ser Asp
          20           25           30
Tyr Ala Trp Asn Trp Ile Arg Gln Phe Pro Gly Asn Arg Leu Glu Trp
          35           40           45
Met Gly Tyr Ile Arg Tyr Ser Gly Ile Thr Arg Tyr Asn Pro Ser Leu

```

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50                      55                      60  
 Lys Ser Arg Ile Ser Ile Thr Arg Asp Thr Ser Lys Asn Lys Phe Phe  
 65                      70                      75                      80  
 Leu Gln Leu Asn Ser Val Thr Thr Glu Asp Thr Ala Thr Tyr Tyr Cys  
                     85                      90                      95  
 Val Arg Ile His Tyr Tyr Gly Tyr Gly Asn Trp Gly Gln Gly Thr Thr  
                     100                      105                      110  
 Leu Thr Gly Leu Pro  
                     115

## (2) INFORMATION FOR SEQ ID NO:14:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 116 amino acids
  - (B) TYPE: amino acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: protein

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:14:

Asp Val Gln Leu Gln Glu Ser Gly Pro Glu Leu Val Lys Pro Gly Ala  
 1                      5                      10                      15  
 Ser Val Lys Leu Ser Cys Lys Ala Ser Gly Tyr Pro Phe Thr Asp Tyr  
                     20                      25                      30  
 Asn Met Tyr Trp Val Lys Gln Ser His Gly Lys Ser Leu Glu Trp Ile  
                     35                      40                      45  
 Gly Tyr Ile Asp Pro Ser Asn Gly Gly Ile Phe Tyr Asn Gln Lys Phe  
                     50                      55                      60  
 Lys Gly Arg Ala Thr Leu Thr Val Asp Lys Ser Ser Asn Thr Ala Phe  
 65                      70                      75                      80  
 Met His Leu Asn Ser Leu Thr Ser Glu Asp Ser Ala Val Tyr Tyr Cys  
                     85                      90                      95  
 Ala Arg Gly Gly Gly Leu Phe Ala Tyr Trp Gly Gln Gly Thr Leu Val  
                     100                      105                      110  
 Thr Val Ser Glu  
                     115

## (2) INFORMATION FOR SEQ ID NO:15:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 116 amino acids
  - (B) TYPE: amino acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

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(ii) MOLECULE TYPE: protein

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:15:

Glu Ile His Leu Gln Glu Ser Gly Glu Leu Val Lys Pro Gly Ala Ser  
 1 5 10 15  
 Val Lys Leu Ser Cys Lys Ala Ser Gly Tyr Ser Phe Thr Ser Asp Tyr  
 20 25 30  
 Asn Met Tyr Trp Val Lys Gln Ser His Gly Lys Ser Leu Glu Trp Ile  
 35 40 45  
 Gly Tyr Ile Asp Pro His Asn Gly Gly Ile Phe Tyr Asn Gln Lys Phe  
 50 55 60  
 Lys Gly Arg Ala Thr Leu Thr Val Asp Lys Ser Ser Asn Thr Ala Phe  
 65 70 75 80  
 Met His Leu Asn Val Leu Thr Ser Glu Asp Ser Ala Val Tyr Tyr Cys  
 85 90 95  
 Ala Arg Gly Gly Gly Leu Phe Ala Tyr Trp Gly Arg Gly Thr Leu Val  
 100 105 110  
 Thr Val Ser Ala  
 115

(2) INFORMATION FOR SEQ ID NO:16:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 115 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: protein

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:16:

Glu Val Gln Leu Gln Glu Ser Gly Pro Glu Leu Val Lys Pro Gly Ala  
 1 5 10 15  
 Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Ser Phe Asp Tyr Asn  
 20 25 30  
 Met Tyr Trp Val Lys Gln Asn His Gly Glu Ser Leu Glu Trp Ile Ala  
 35 40 45  
 Tyr Ile Asp Pro Ser Asn Gly Asp Thr Arg Tyr Asn Gln Lys Phe Gln  
 50 55 60  
 Gly Lys Ala Thr Val Thr Leu Asp Lys Ser Ser Ser Thr Ala Phe Met  
 65 70 75 80  
 His Leu Asn Ser Leu Thr Ser Glu Asp Ser Ala Val Tyr Tyr Cys Ala  
 85 90 95  
 Arg Gly Gly Gly Leu Phe Ala Phe Trp Gly Gln Gly Thr Leu Val Thr

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100

105

110

Val Ser Ala  
115

(2) INFORMATION FOR SEQ ID NO:17:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 116 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: protein

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:17:

[illegible]

(2) INFORMATION FOR SEQ ID NO:18:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 115 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: protein

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:18:

Val Gln Leu Leu Glu Ser Gly Ala Glu Leu Val Lys Pro Gly Ala Ser

[illegible]

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1		5		10		15
Val	Glu	Leu	Ser	Cys	Arg	Thr
		20				
			Ser	Gly	Tyr	Thr
				25		
					Phe	Thr
						30
						Tyr
						Tyr
Ile	Tyr	Trp	Val	Lys	Gln	Arg
		35				40
					Gly	Gln
					Gly	Leu
						45
						Trp
						Ile
						Gly
Gly	Met	Asn	Pro	Gly	Asn	Gly
	50				55	
						Val
						Thr
						Tyr
						Phe
						60
						Asn
						Glu
						Lys
						Phe
						Lys
Asn	Arg	Ala	Thr	Leu	Thr	Val
	65				70	
						Asp
						Arg
						Ser
						75
						Ser
						Ser
						Ile
						Ala
						Tyr
						Met
						80
Gln	Leu	Ser	Ser	Leu	Thr	Ser
				85		
						Glu
						Asp
						Ser
						90
						Ala
						Val
						Tyr
						Tyr
						95
						Cys
						Thr
Arg	Val	Gly	Asn	Leu	Phe	Ala
			100			
						Tyr
						Trp
						105
						Gly
						Arg
						Gly
						Thr
						110
						Leu
						Val
						Thr
Val	Ser	Ala				
		115				

## (2) INFORMATION FOR SEQ ID NO:19:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 16 amino acids
  - (B) TYPE: amino acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:19:

Arg	Ser	Ser	Arg	Ser	Leu	Leu	Tyr	Arg	Asp	Gly	Lys	Thr	Tyr	Leu	Asn
1				5					10					15	

## (2) INFORMATION FOR SEQ ID NO:20:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 7 amino acids
  - (B) TYPE: amino acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:20:

Leu	Met	Ser	Thr	Arg	Ser	Ser
1				5		

## (2) INFORMATION FOR SEQ ID NO:21:

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- (i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 9 amino acids  
(B) TYPE: amino acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:21:

Gln His Phe Val Asp Tyr Pro Phe Thr  
1 5

(2) INFORMATION FOR SEQ ID NO:22:

- (i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 16 amino acids  
(B) TYPE: amino acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:22:

Arg Ser Ser Lys Ser Leu Leu Tyr Glu Asp Gly Lys Thr Tyr Leu Asn  
1 5 10 15

(2) INFORMATION FOR SEQ ID NO:23:

- (i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 7 amino acids  
(B) TYPE: amino acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:23:

Leu Met Ser Thr Arg Ala Ser  
1 5

(2) INFORMATION FOR SEQ ID NO:24:

- (i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 9 amino acids  
(B) TYPE: amino acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

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(xi) SEQUENCE DESCRIPTION: SEQ ID NO:24:

Gln His Phe Glu Asp Tyr Pro Phe Thr  
1 5

(2) INFORMATION FOR SEQ ID NO:25:

- (i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 16 amino acids  
(B) TYPE: amino acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:25:

Arg Ser Ser Lys Ser Leu Tyr Glu Asp Gly Lys Thr Tyr Leu Asn  
1 5 10 15

(2) INFORMATION FOR SEQ ID NO:26:

- (i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 7 amino acids  
(B) TYPE: amino acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:26:

Leu Met Ser Thr Arg Ala Ser  
1 5

(2) INFORMATION FOR SEQ ID NO:27:

- (i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 9 amino acids  
(B) TYPE: amino acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:27:

Gln Gln Phe Val Glu Tyr Pro Phe Thr  
1 5

(2) INFORMATION FOR SEQ ID NO:28:

- (i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 16 amino acids  
(B) TYPE: amino acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

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(xi) SEQUENCE DESCRIPTION: SEQ ID NO:28:

Arg Ser Ser Arg Ser Leu Leu Tyr Arg Asp Gly Lys Thr Tyr Leu Asn  
1 5 10 15

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 7 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

```
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:29:
```

Leu Met Ser Thr Arg Ala Ser  
1 5

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 9 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:30:

Gln His Phe Glu Asp Tyr Pro Phe Thr  
1 5

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 14 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:31:

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Arg Ser Ser Thr Gly Thr Ile Thr Thr Ser Asn Tyr Ala Asn  
1 5 10

## (2) INFORMATION FOR SEQ ID NO:32:

- (i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 7 amino acids  
(B) TYPE: amino acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:32:

Ile Asn Asn Asn Arg Pro Pro  
1 5

## (2) INFORMATION FOR SEQ ID NO:33:

- (i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 9 amino acids  
(B) TYPE: amino acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:33:

Ala Leu Trp Tyr Ser Asn His Trp Val  
1 5

## (2) INFORMATION FOR SEQ ID NO:34:

- (i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 14 amino acids  
(B) TYPE: amino acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:34:

Arg Ser Ser Ala Gly Thr Ile Thr Thr Ser Asn Tyr Ala Asn  
1 5 10

## (2) INFORMATION FOR SEQ ID NO:35:

- (i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 7 amino acids  
(B) TYPE: amino acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

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(xi) SEQUENCE DESCRIPTION: SEQ ID NO:35:

Val Asn Asn Asn Arg Pro Pro  
1 5

(2) INFORMATION FOR SEQ ID NO:36:

- (i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 9 amino acids  
(B) TYPE: amino acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:36:

Ala Leu Trp Tyr Ser Asn His Trp Val  
1 5

(2) INFORMATION FOR SEQ ID NO:37:

- (i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 14 amino acids  
(B) TYPE: amino acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:37:

Arg Ser Ser Thr Gly Thr Ile Thr Ser Asp Asn Tyr Ala Asn  
1 5 10

(2) INFORMATION FOR SEQ ID NO:48:

- (I) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 7 amino acids  
(B) TYPE: amino acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:48:

Val Asn Asn Tyr Arg Pro Pro  
1 5

(2) INFORMATION FOR SEQ ID NO:39:

- (i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 9 amino acids  
(B) TYPE: amino acid  
(C) STRANDEDNESS: single

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(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:39:

Ala Leu Trp Tyr Ser Asn His Trp Val  
1 5

(2) INFORMATION FOR SEQ ID NO:40:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 14 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:40:

Arg Ser Ser Ser Gly Thr Ile Thr Ala Asn Asn Tyr Gly Ser  
1 5 10

(2) INFORMATION FOR SEQ ID NO:41:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 7 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:41:

Val Ser Asn Asn Arg Gly Pro  
1 5

(2) INFORMATION FOR SEQ ID NO:42:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 9 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:42:

Ala Leu Trp Asn Ser Asn His Phe Val  
1 5

(2) INFORMATION FOR SEQ ID NO:43:

00940727 082804  
T082804 2204560

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- (i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 16 amino acids  
(B) TYPE: amino acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:43:

Lys Ser Ser Gln Ser Leu Leu Tyr Ser Asp Gly Lys Thr Tyr Leu Asn  
1 5 10 15

(2) INFORMATION FOR SEQ ID NO:44:

- (i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 7 amino acids  
(B) TYPE: amino acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:44:

Leu Val Ser Lys Leu Asp Ser  
1 5

(2) INFORMATION FOR SEQ ID NO:45:

- (i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 9 amino acids  
(B) TYPE: amino acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:45:

Val Gln Gly Tyr Thr Phe Pro Leu Thr  
1 5

(2) INFORMATION FOR SEQ ID NO:46:

- (i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 6 amino acids  
(B) TYPE: amino acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:46:

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Ser Asp Tyr Ala Trp Thr  
1 5

## (2) INFORMATION FOR SEQ ID NO:47:

- (i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 16 amino acids  
(B) TYPE: amino acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:47:

Tyr Ile Arg His Ile Tyr Gly Thr Arg Tyr Asn Pro Ser Leu Ile Ser  
1 5 10 15

## (2) INFORMATION FOR SEQ ID NO:48:

- (i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 8 amino acids  
(B) TYPE: amino acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:48:

Tyr His Tyr Tyr Gly Ser Ala Tyr  
1 5

## (2) INFORMATION FOR SEQ ID NO:49:

- (i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 6 amino acids  
(B) TYPE: amino acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:49:

Ser Asp Tyr Ala Trp Thr  
1 5

## (2) INFORMATION FOR SEQ ID NO:50:

- (i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 16 amino acids  
(B) TYPE: amino acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

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(xi) SEQUENCE DESCRIPTION: SEQ ID NO:50:

Tyr Ile Arg His Ile Tyr Gly Thr Arg Tyr Asn Pro Ser Leu Ile Ser  
1                      5                      10                      15

(2) INFORMATION FOR SEQ ID NO:51:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 8 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:51:

Tyr His Tyr Tyr Gly Ser Ala Tyr  
1                      5

(2) INFORMATION FOR SEQ ID NO:52:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 6 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:52:

Ser Asp Tyr Ala Trp Asn  
1                      5

(2) INFORMATION FOR SEQ ID NO:53:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 16 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:53:

Tyr Ile Arg Tyr Ser Gly Ile Thr Arg Tyr Asn Glu Ser Leu Lys Ser  
1                      5                      10                      15

(2) INFORMATION FOR SEQ ID NO:54:

(i) SEQUENCE CHARACTERISTICS:

00940727.032201

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- (A) LENGTH: 8 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:54:

Ile His Tyr Tyr Gly Tyr Gly Asn  
1 5

(2) INFORMATION FOR SEQ ID NO:55:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 6 amino acids
  - (B) TYPE: amino acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:55:

Ser Asp Tyr Ala Trp Thr  
1 5

(2) INFORMATION FOR SEQ ID NO:55:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 16 amino acids
  - (B) TYPE: amino acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:56:

Tyr Ile Arg His Ile Tyr Gly Thr Arg Tyr Asn Pro Ser Leu Ile Ser  
1 5 10 15

(2) INFORMATION FOR SEQ ID NO:57:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 8 amino acids
  - (B) TYPE: amino acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

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(xi) SEQUENCE DESCRIPTION: SEQ ID NO:57:

Tyr His Tyr Tyr Gly Ser Ala Tyr  
1 5

(2) INFORMATION FOR SEQ ID NO:58:

- (i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 5 amino acids  
(B) TYPE: amino acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:58:

Asp Tyr Asn Met Tyr  
1 5

(2) INFORMATION FOR SEQ ID NO:59:

- (i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 17 amino acids  
(B) TYPE: amino acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:59:

Tyr Ile Asp Pro Ser Asn Gly Gly Ile Phe Tyr Asn Gln Lys Phe Lys  
1 5 10 15

Gly

(2) INFORMATION FOR SEQ ID NO:60:

- (i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 7 amino acids  
(B) TYPE: amino acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:60:

Gly Gly Gly Leu Phe Ala Tyr  
1 5

(2) INFORMATION FOR SEQ ID NO:61:

- (i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 5 amino acids

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- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:61:

Asp Tyr Asn Met Tyr  
1 5

(2) INFORMATION FOR SEQ ID NO:62:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 17 amino acids
  - (B) TYPE: amino acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:62:

Tyr Ile Asp Pro His Asn Gly Gly Ile Phe Tyr Asn Gln Lys Phe Lys  
1 5 10 15

Gly

(2) INFORMATION FOR SEQ ID NO:63:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 7 amino acids
  - (B) TYPE: amino acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:63:

Gly Gly Gly Leu Phe Ala Tyr  
1 5

(2) INFORMATION FOR SEQ ID NO:64:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 5 amino acids
  - (B) TYPE: amino acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:64:

094072404660



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Asp Tyr Asn Met Tyr  
1 5

## (2) INFORMATION FOR SEQ ID NO:65:

- (i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 17 amino acids  
(B) TYPE: amino acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:65:

Tyr Ile Asp Pro Ser Asn Gly Asp Thr Phe Tyr Asn Gln Lys Phe Gln  
1 5 10 15  
Gly

## (2) INFORMATION FOR SEQ ID NO:66:

- (i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 7 amino acids  
(B) TYPE: amino acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:66:

Gly Gly Gly Leu Phe Ala Phe  
1 5

## (2) INFORMATION FOR SEQ ID NO:67:

- (i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 5 amino acids  
(B) TYPE: amino acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:67:

Thr Tyr Tyr Ile Tyr  
1 5

## (2) INFORMATION FOR SEQ ID NO:68:

- (i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 17 amino acids  
(B) TYPE: amino acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

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(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:68:

Gly Met Asn Pro Gly Asn Gly Val Thr Tyr Phe Asn Glu Lys Phe Lys  
1                      5                      10                      15  
Met

(2) INFORMATION FOR SEQ ID NO:69:

- (i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 7 amino acids  
(B) TYPE: amino acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:69:

Val Gly Asn Leu Phe Ala Tyr  
1                      5

(2) INFORMATION FOR SEQ ID NO:70:

- (i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 5 amino acids  
(B) TYPE: amino acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:70:

Asp His Trp Met His  
1                      5

(2) INFORMATION FOR SEQ ID NO:71:

- (i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 17 amino acids  
(B) TYPE: amino acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:71:

Thr Ile Asp Leu Ser Asp Thr Tyr Thr Gly Tyr Asn Gln Asn Phe Lys  
1                      5                      10                      15

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Gly

## (2) INFORMATION FOR SEQ ID NO:72:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 5 amino acids
  - (B) TYPE: amino acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:72:

Arg Gly Phe Asp Tyr  
1 5

## (2) INFORMATION FOR SEQ ID NO:73:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 14 amino acids
  - (B) TYPE: amino acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:73:

Arg Ser Ser Xaa Gly Thr Ile Thr Xaa Xaa Asn Tyr Ala Asn  
1 5 10

## (2) INFORMATION FOR SEQ ID NO:74:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 7 amino acids
  - (B) TYPE: amino acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:74:

Xaa Asn Asn Tyr Arg Pro Pro  
1 5

## (2) INFORMATION FOR SEQ ID NO:75:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 9 amino acids
  - (B) TYPE: amino acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

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(xi) SEQUENCE DESCRIPTION: SEQ ID NO:75:

Ala Leu Trp Tyr Ser Asn His Trp Val  
1 5

(2) INFORMATION FOR SEQ ID NO:76:

(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 5 amino acids  
(B) TYPE: amino acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:76:

Asp Tyr Asn Met Tyr  
1 5

(2) INFORMATION FOR SEQ ID NO:77:

(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 17 amino acids  
(B) TYPE: amino acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:77:

Tyr Ile Asp Pro Xaa Asn Gly Xaa Xaa Phe Tyr Asn Gln Lys Phe Xaa  
1 5 10 15

Gly

(2) INFORMATION FOR SEQ ID NO:78:

(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 7 amino acids  
(B) TYPE: amino acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:78:

Gly Gly Gly Leu Phe Ala Xaa

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## (2) INFORMATION FOR SEQ ID NO:79:

- (i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 16 amino acids  
(B) TYPE: amino acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:79:

Arg Ser Ser Xaa Ser Leu Leu Tyr Xaa Asp Gly Lys Thr Tyr Leu Asn  
1 5 10 15

## (2) INFORMATION FOR SEQ ID NO:80:

- (i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 7 amino acids  
(B) TYPE: amino acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:80:

Leu Met Ser Thr Arg Xaa Ser  
1 5

## (2) INFORMATION FOR SEQ ID NO:81:

- (i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 9 amino acids  
(B) TYPE: amino acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:81:

Gln Xaa Phe Xaa Xaa Tyr Pro Phe Thr  
1 5

## (2) INFORMATION FOR SEQ ID NO:82:

- (i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 6 amino acids  
(B) TYPE: amino acid

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- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:82:

Ser Asp Tyr Ala Trp Xaa  
1 5

(2) INFORMATION FOR SEQ ID NO:83:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 16 amino acids
  - (B) TYPE: amino acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:83:

Tyr Ile Arg Xaa Xaa Xaa Xaa Thr Arg Tyr Asn Pro Ser Leu Xaa Ser  
1 5 10 15

(2) INFORMATION FOR SEQ ID NO:84:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 8 amino acids
  - (B) TYPE: amino acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:84:

Xaa His Tyr Tyr Gly Xaa Xaa Xaa  
1 5

(2) INFORMATION FOR SEQ ID NO:85:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 330 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:85:

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TCTGGACCTG AGCTGGTGAA GCCTGGGGCT TCAGTGAAGG TATCCTGTAA GGCTTCTGGT 60  
TATTCATTCA CTGACTACAA TATGTACTGG GTGAAGCAGA ACCATGGAGA GAGCCTTGAA 120  
TGGATTGCAT ATATTGATCC TTCCAATGGT GATACTTTCT ACAACCAGAA ATTCCAGGGC 180  
AAGGCCACAG TGA CTCTTGA CAAGTCCTCC AGTACAGCCT TCATGCATCT CAACAGCCTG 240  
ACATCTGAGG ACTCTGCAGT CTATTACTGT GCAAGAGGGG GGGGCCTGTT TGCTTTCTGG 300  
GGGCAAGGGA CTCTGGTCAC TGTCTCTGCA 330

(2) INFORMATION FOR SEQ ID NO:88:

- (i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 368 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:86:

GATATGGTGA TGACGCAAGA CGAACTCTCC AATCCTGTCA CTTCTGGAGA ATCAGTTTCC 60  
ATCTCCTGCA GGTCTAGTAA GAGTCTCCTA TATGAGGATG GGAAGACATA CTTGAATTGG 120  
TTTCTGCAGA GACCAGGACA ATCTCCTCAC CTCCTGATCT ATTTGATGTC CACCCGTGCA 180  
TCAGGAGTCT CAGACCGGTT TAGTGGCAGT GGGTCAGGAA CAGATTTTAC CCTGGAAATC 240  
AGTAGAGTGA AGGCTGAGGA TGTGGGTGCG TATTACTGTC AACAAATTTGT AGAGTATCCA 300  
TTCACGTTTC GCTCGGGGAC AAAGTTGGAA ATAAGACGGG TTGATGCCGC ACCAACTGTA 360  
TCCATCTT 368

(2) INFORMATION FOR SEQ ID NO:87:

- (i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 366 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:87:

GATGTGCAGC TTCAGGAGTC GGGACCTGGC CTGGTGAAAC CTTCTCAGTC TCTGTCCCTC 60  
ACCTGCACTG TCACTGGCAA TTCAATCACC AGTGATTATG CCTGGACCTG GATCCGGCAG 120  
TTTCCAGGAA ACAAACTGGA GTGGATGGGC TACATAAGGC ACATTTATGG CACTAGGTAC 180  
AACCCTTCTC TCATAAGTCG AATCTCTATC ACTCGAGACA CGTCCAAGAA CCAGTTCTTC 240  
CTGCAGTTGG ATTCTGTGAC TGCTGAGGAC ACAGCCACAT ATTATTGTGT AAGATATCAT 300  
TACTACGGTT CGGCTTACTG GGGCCAAGGG ACTCTGGTCA CTGTCTCTGC AGCCAAAACG 360

FOB 2000 2/20/96

-100-

ACACCC

366

## (2) INFORMATION FOR SEQ ID NO:88:

- (i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 339 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:88:

GATATTGTGA TGACCCAGGA TGAACCTCTCC AATCCTGTCA CTTCTGGAGA ATCAGTTTCC	60
ATCTCCTGCA GGTCTAGTAG GAGTCTCCTA TATAGGGATG GGAAGACATA CTTGAATTGG	120
TTTCTGCAGA GACCAGGACG ATCTCCTCAA CTCCTGATCT ATTTGATGTC CACCCGTTCA	180
TCAGGAGTCT CAGACCGGTT TAGTGGCAGT GGGTCAGGAA CAGATTTTCA CCTGGAAATC	240
AGTAGAGTGA AGGCTGAGGA TGTGGGTGTG TATTACTGTC AACACTTTGT AGACTATCCA	300
TTCACGTTTC GCTCGGGGAC AAAGTTGGAG ATAAAACGG	339

## (2) INFORMATION FOR SEQ ID NO:89:

- (i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 366 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:89:

GACGTGCAGT TGCAGGAGTC GGGACCTGGC CTGGTGAAAC CTTCTCAGTC TCTGTCCCTC	60
ACCTGCACTG TCACTGGCAA TTCAATCACC AGTGATTATG CCTGGACCTG GATCCGGCAG	120
TTTCCAGGAA ACAAACTGGA GTGGATGGGC TACATAAGGC ACATTTATGG CACTAGGTAC	180
AACCTTCTC TCATAAGTCG AATCTCTATC ACTCGAGACA CGTCCAAGAA CCAGTTCTTC	240
CTGCAGTTGG ATTCTGTGAC TGCTGAGGAC ACAGCCACAT ATTATTGTGT AAGATATCAT	300
TACTACGGTT CGGCTTACTG GGGCCAAGGG ACTCTGGTCA CTGTCTCTGC AGCCAAAACG	360
ACACCC	366

## (2) INFORMATION FOR SEQ ID NO:90:

- (i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 368 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA



(xi) SEQUENCE DESCRIPTION: SEQ ID NO:90:

GATATGGTGA TGACGCAAGA TGAACCTCTCC AATCCTGTCA CTTCTGGAGA ATCAGTTTCC	60
ATCTCCTGCA GGTCTAGTAG GAGTCTCCTA TATAGGGATG GGAAGACATA CTTGAATTGG	120
TTTCTGCAGA GACCAGGACG ATCTCCTCAA CTCCTGATCT ATTTGATGTC CACCCGTGCA	180
TCAGGAGTCT CAGACCGGTT TAGTGGCAGT GGGTCAGGAA CAGATTTTAC CCTGGAAATC	240
AGTAGAGTGA AGGCTGAGGA TGTGGGTGTG TATTACTTTC AACACTTTGA AGACTATCCA	300
TTCACGTTTC GCTCGGGGAC AAAATTGGAG ATAAAACGGG CTGATGCTGC ACCAACTGTA	360
TCCATCTT	368

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T08280 2204660